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AUTHOR Wilson, Chuck
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ABSTRACT

This report presents distance education as a viable alternative to more traditional college course-offerings. The argument is made that the most effective competitive strategies are innovative and effective educational strategies, of which distance education is one. The report first discusses distance education in theory and practice and reviews various typologies, distance delivery programs, and theoretical models. Next, the instructional considerations in using distance education are explored, including factors involved in student learning, teaching styles, and teacher role. Finally, the report presents the opportunities and challenges of distance education, including the steps needed for bridging the gap with higher education and what the future may hold for this form of education. Contains 62 references. (GLR)

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Trends in Distance Education:

A Viable Alternative

for

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Trends in Distance Education:

A Viable Alternative for Higher Education

by
Chuck Wilson
International Correspondence Institute
Regional Director
for
Central Africa

Ed. M. Adult Education
Oregon State University
Corvallis, Oregon
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Abbreviations

University of Wisconsin-Extension's Educational Telephone Network	ETN
University of the State of New York	USNY
American College Testing/Proficiency Examination Program	ACT/PEP
State University of New York	SUNY
Pennsylvania Learning Network	PENNARAMA
International Correspondence Institute	ICI
National Home Study Council	NHSC
Emergency Education Network	EENET
Open University in the United Kingdom	OUUK
Tele University in Quebec, Canada	T-U
Western Interstate Commission on Higher Education	WICHE
Facsimile transmission	FAX
PBS Adult Learning Service	ALS
Cable Television	CATV
Instructional Television-Fixed Service	ITFS
Indiana Higher Education Telecommunication System	IHETS
The National University Teleconferencing Network	NUTN
National Technological University	NTU
American Telephone and Telegraph	ATT
Computer-Assisted Instruction	CAI
Computer-Managed Instruction	CMI
Computer Teleconferencing	CT
Distance Learner	DL
Embedded Figures Test	EFT
Field Independent	FI
Field Dependent	FD
Nigerian Advanced School of Theology	NAST
The Interactive Satellite Educational Network	ISEN

Introduction

Purpose

The purpose of this paper is to present Distance Education as a viable alternative to more traditional college course-offerings. Many institutions of Higher Education, both public and private, are finding that they are having to *fight* for their "market share" of the student population. There may be two reasons for this:

1. The general "graying" of America. There are just not as many "fresh-out-of-high-school" students out there to be recruited.
2. There are plenty of well-funded institutions in the U.S., offering a large variety of attractive programs. It's hard to compete.

Institutions are using several different strategies to maintain their competitive edge--some of these strategies are fairly effective and some much less effective. It is this author's opinion that the most effective competitive strategies are innovative and effective educational strategies. Distance Education is just that: an innovative and effective educational strategy.

This paper was originally intended as a survey of current trends in Distance Education at a postsecondary level; however in discussing the topic with professionals in higher education---it was clear that some were committed to distance delivery programs, some were dabbling in Distance Education, while others felt that Distance Education was in their future. The interest expressed in Distance Education impelled me to write a persuasive paper on Distance Education: A Viable Alternative for Higher Education. Clark and Verduin (1991) say this about Distance Education: that the "key to greater acceptability, then, is encourage the educator (and administrator) to become more knowledgeable and move toward some implementation activities". That is precisely the intention of this paper.

The Changing World of Adult Education

Educators are discussing a paradigm shift in adult education--from remedial education in the 1930's which focused on "curing illiteracy" (Rachal, 1988) to the modern concept of lifelong learning. The discipline of adult education began in the 1930's at Columbia University; presently there are no less than 140 institutions in North America with at least one professor of adult education (1988). Clark and Verduin describe the concept of adult or lifelong education:

> ...can occur in many different places and can involve a variety of emphases in terms of programs. It can be sponsored by and housed in numerous organizations and institutions, both private and public. It can offer learning experiences to the highly educated adult and those who may be perceived as functionally illiterate. It can be designed for those who are economically disadvantaged and for those who may be quite affluent. It is designed basically to meet the needs of adults and, in many cases, the needs of an organization and society in general (1991, p. 5).

Research cited by Brookfield has done much to change understanding and direction of Adult Education. This research has accomplished three things:

1. Helped to shift the focus of educators' attention onto the phenomenon of adult learning rather than program design and planning skills.
2. Has challenged the assumption that adult learning can only occur in the presence of a fully accredited and certified professional teacher appropriately trained in techniques of instructional design and classroom management.
3. Helped to break down the dichotomy in which institutionally sponsored learning is seen as purposeful and deliberate and learning occurring in non-institutional contexts is held to be serendipitous, ineffective and wholly experiential (Brookfield, 1984).

The paradigm shift is a reflection of the aging of the American population and the popularity of educational programs amongst older adults. Students twenty-five years and older made up 38% of the college enrollment in 1977, 42% in 1987, and the National Center for Educational Statistics predicts they will make up 45% of the college enrollment by 1997 (1991). Vocational and continuing programs enroll about 66% of all postsecondary adult students in America (1991). According to Carol Aslanian of the Office of Adult Learning Services of the College Board, there are at least 6 million adult degree or credit students enrolled in 3000 colleges and universities in America (Porter, 1991). She goes on to say that there are another 6 million adult students enrolled in non-credit courses (1991). The adult learner is normally a part time student and that explains why 50% of all vocational students and 80% of all continuing education students are 25 years or older. In 1984, the National Center for Educational Statistics stated that 23 million adult students were enrolled in over 43 million courses (1991). Business and industry are presently spending $6 billion a year sending their employees back to colleges and universities for further training (1991).

The paradigm shift will likely renew concerns about literacy training for adults--especially considering President Bush's recent announcement of proposed educational reforms that indicate the need for training the 25 million American adults who are functionally illiterate (Shribman & Stout, 1991). Industry has recognized the need for literacy training in order to have an adequately trained workforce; Rockwell International offers courses in literacy and remedial math, Marriot Corp. contracts with local community colleges to provide necessary training for their workers, and the state of Mississippi offers a partial tax credit for workers involved in training (1991). Christian Keen, issues manager for the Society for Human Resource Management, states "by the year 2000, 85% of jobs will require a high school education, yet graduation rate stands at about 72%" (Wall Street Journal, 1991, April 16). Hudson Institute, a Washington-based think tank writes that 75% of the 21 million new workers needed between 1986 to 2000 will have limited verbal and writing skills and will only qualify for 40% of the jobs (Clark & Verduin, 1991).

A recent statewide survey conducted by the Oregon Progress Board in the State of Oregon on 2000 adults between the age of 16-65 concluded:

Prose Skills	
Locate information in a short sports article	97%
List evidence cited in a newspaper column to support the author's argument	47%
Identify the proper tax form to file from among several referred to in a magazine article	6%
Quantitative Skills	
Total two entries on a deposit slip	96%
Determine correct change using a menu	37%
Determine gain from biweekly vs. monthly investment using a savings bond advertisement	5%
Document Skills	
Locate a meeting time listed on a memo	99%
Determine correct medicine dosage using a dosage chart and a child's age and weight	35%
Use a bus schedule to select appropriate bus for given departures and arrivals	18%

(Graves, 1991)

One of the important issues in adult education is, can the existing educational institutions keep up with a changing world? Duning cites a quote from the 1983 article, "Preparing for Today Tomorrow: Faculty Training for the New Technologies":

> It is my belief that we are woefully late in whatever preparations we will make, and that the prospects for a rapid adaptation are not observable in higher education (1988).

The issue in higher education is its willingness to respond to the technological and social changes of our society. Changes in communication, education, and administration are rapid and their impact is difficult to predict. The critical aspect of this issue is best described by the picture of a dinosaur with this caption:

History is full of giants who couldn't adapt.

(Kapp, 1990)

Distance Education: Step-Child or Prodigal Son?

The fundamental question for Higher Education is: are we going to maintain our traditional posture or are we willing to venture into new areas? Goodnight states that obsolescence is the most important word for today---change is occurring so rapidly that what exists today will not be in the future---for the future, obsolescence should be an obsolete word (1989). Perception of Distance Education is a critical issue in determining an institution's ability to adapt to ever-changing society.

For long Distance Education has been perceived as a step-child of Higher Education; there has been the view that it is "second-best substitute for on-campus instruction"....tolerated, but not embraced. It has been viewed as a type of "back-door learning" (Knapper,1988) or as Von. V. Pittman, director of the University's of Iowa's Center for Credit program states, there is somewhat of a "caste system" between Distance Education and the university (Clark and Verduin, 1991). The image of Distance Education has been stereotyped as a "mail-order outfit", advertising on matchbooks and generally associated with proprietary schools (1991). Teachers of Higher Education have had a less than positive attitude towards Distance Education and have been resistant to consider it for a variety of reasons:

> Some instructors are resistant to dealing with students who cannot get to campus, having little or no sympathy for the student whose life situation does not permit attending college in the traditional manner. Some believe that 'you can't teach this way' no matter what. They also note that some faculty see as unhealthy the narrow focus on serving well-heeled professional markets, the primary justification for the use of new technologies off campus (1991, p. 114).
>
> Some are fueled, in part, by mistrust of instruction that is open to all and its seeming incompatibility with the academic standards represented by entrance screening (Dunning, 1987, p. 39).

Distance Education has been hurt by such slogans: "Reaching the unreachable" which have provoked the academicians to fight back with such sayings as: "dispense erudition by mail order" or to "dilettante(s) beyond the pale" (1988).

If Higher Education is to move from a maintenance mode of operation to an adaptive one, it must consider non-traditional instructional delivery systems that will enable these institutions to adapt to the future needs of society. It is the author's opinion that Distance Education is the long-lost instructional delivery system (i.e. the prodigal son) that is able to most effectively adapt to the changing environment of Higher Education. The concept of "Lifelong Learning" that is, learning should be "from life, for life, and throughout life" (Knapper, 1988) has become increasingly popular today. Research has shown that the bulk of on-campus learning takes place outside the classroom and in the absence of an instructor (1988). With these educational changes in our society, educational institutions that desire to adapt to these changes must consider the following criteria for lifelong educational needs:

- Participation by a broad cross section of the population
- Integration of general and vocationally oriented education
- Flexibility in the content and organization of instruction
- Credit for prior learning experiences in both formal and non-formal settings
- Close links between education and the world of work
- Use of non-professional teachers and resource people where appropriate
- Emphasis on self-instruction
- Provision of help with learning and study skills (1988, p. 67)

Faure, Knapper and Cropley and others believe that Distance Education has two enormous advantages over traditional Higher Education for responding to these issues:

1. Distance Education has the potential for substantially broadening access to higher learning and hence fostering greater equality of educational opportunity.
2. Distance Education places a major emphasis on self-instruction, active study methods, and students' assumption of responsibility for their own learning. (1988, p.69).

Distance Education also is able to adapt more effectively to the following societal problems:

- Massive and ever increasing numbers of people.
- A population that is widely dispersed and of low density.
- Significant numbers of people cannot (or will not) avail themselves (for whatever reasons) of facilities provided via a conventional system. (Neil, 1983)

Distance Education is now beginning to gain the respect of the mainstream of higher educational leaders. Due to the advancements in technology, institutions are dabbling in other delivery modes and their complex mix: telephones with computers, audio with video, computers with television, video with computers, satellite links with telephone,etc. The use of these exotic modes in the delivery of instruction is altering pedagogical and administrative methodologies....institutions are moving into education at a distance without realizing they have embraced Distance Education. The prodigal son has entered the "back door" of traditional Higher Education and the adaptive institutions are welcoming home Distance Education as an agent for change, growth, and diversification as they endeavor to fulfill their reason for being.

Defining Distance Education: Setting Boundaries in Theory and Practice

Defining the Field

The problem with defining Distance Education seems to be this paradox: it has asserted its existence, but it cannot define itself. Shale describes the problem: "Anyone working in distance education would be likely to claim to 'know it when I see it'" (1988). Shale's concern is that if we press for a morphological definition of Distance Education, then we have limited its scope and we have admitted that it's different than other traditional forms of education (1988, Garrison & Shale,1987). Several leading spokesmen for Distance Education have attempted to define it; these definitions provide a historical and descriptive framework for understanding Distance Education:

Borje Holmberg

Holmberg is from Sweden, works in the Federal Republic of Germany
and often writes in English; he sees Distance Education as possessing two essential elements:

- the separation of teacher and learner
- the planning of an educational organization (Sewart, Keegan, & Holmberg,1983).

The French Law

On July 12, 1971, the French Government passed a law regulating Distance Education and they defined it as:

- separation of teacher and learner
- the possibility of occasional seminars or meetings between student and teacher (1983).

Michael Moore

Moore added another element to the definition:

- the separation of teaching behaviors and learning behaviors
- the use of technical media
- the possibility of two-way communication

In 1987 at the International Council for Correspondence Education, Moore said that Distance Education was "any formal approach to learning in which a majority of instruction occurs while educator and learner are at a distance from one another" (Verduin & Clark, 1991, p. 8).

Desmond Keegan

Keegan, whose work in Australia and Germany, has gained him the reputation as one of the leading spokesman for Distance Education, especially in the international arena. His definition has gone through several changes since he first came up with a "descriptive" definition in 1967; his most current revision (1987) includes four essential elements:

- separation of teacher and student during at least a majority of the instructional process
- the influence of an educational organization, including the provision of student evaluation
- the use of educational media to unite teacher and learner and carry course content
- the provision of two-way communication between teacher, tutor, or educational agency and learner (1991, p. 11; Garrison & Shale, 1987; Sewart, Keegan, & Holmberg,1983).

Garrison and Shale feel that Keegan's definition of distance education (as well as the others) are too restrictive; they make the field seem like "correspondence study with bells and whistles"--or an industrialized form of education (1987, Shale, 1988). Shale says that education is a social process, involving dialectical exchange between teacher and student---a process of validating knowledge and negotiating meaning (1988). He goes on to say, if that is what education is---how is Distance Education any different? Shale concludes:

"Distance Education is Education at a Distance".

Shale feels that due to the advancement of two-way communication technologies which make immediate feedback possible, the historical morphological concept of Distance Education has been eroded. If Distance Education "reflects the characteristics of education in general, then it no longer need seek a 'parity of esteem' because it stands outside the pale and must prove itself; it will have parity of esteem by virtue of what it is---education" (1988, p. 33).

Theoretical Models of Distance Education

Constructing a theoretical model is the process of setting boundaries, accommodating all crucial elements and their interrelationships for the purpose of representing and understanding what exists in reality (Kim, 1988). The problem with a theoretical model in Distance Education is that technology is constantly changing the boundaries to the point that Distance Education is now more difficult to distinguish from traditional education. In this section, key system approaches to Distance Education will be examined and then the author will present an adaptive model for the future of use of Distance Education.

Kaye System Model

Kaye presents a generalized distance-learning system which involves three elements:

Students

- a system that is open to new target populations who were previously deprived of educational opportunities because of geographical isolation, lack of formal academic requirements, or employment conditions;
- the identification of particular target groups and their characteristics in order to develop appropriate courses, methods and delivery systems to be designed on a systematic basis.

Learning Materials & Teaching Methods

- flexible in curriculum and content;
- systematic design for independent study including clear objectives, self-assessment devices, student activities, and provision for feedback;
- the planned use of a wide range of media and other resources.

Logistical and Economic Features

- more flexibility than conventional delivery systems,
- centralized, mass production of learning material;
- use of existing infrastructure and facilities (i.e. libraries, postal system, broadcasting organizations, etc.);
- potential for lower cost per student than conventional classroom teaching. (Kaye & Rumble, 1981, pp. 18-19)

Perraton Hypotheses Theory

Hilary Perraton has come up with 14 statements or hypotheses in order to build a theory of what Distance Education is:

Statement 1

You can use any medium to teach anything.

Statement 2

Distance teaching can break the integuments of fixed staffing ratios which limited the expansion of education when teacher and student had to be in the same place at the same time.

Statement 3

There are circumstances under which distance teaching can be cheaper than orthodox education, whether measured in terms of audience reached or of learning.

Statement 4

The economies achievable by distance education are a function of the level of education, size of audience, choice of media and sophistication of production.

Statement 5

Distance teaching can reach audiences who would not be reached by orthodox means.

Statement 6

It is possible to organize distance teaching in such a way that there is dialogue.

Statement 7

Where a tutor meets distance students face-to-face, the tutor's role is changed from being a communicator of information to that of a facilitator of learning.

Statement 8

Group discussion is an effective method of learning when distance teaching is used to bring relevant information to the group.

Statement 9

In most communities there are resources which can be used to support distance learning, to its educational and economic advantage.

Statement 10

A multi-media program is likely to be more effective than one which relies on single medium.

Statement 11

A systems approach is helpful in planning distance education.

Statement 12

Feedback is a necessary part of a distance-learning system.

Statement 13

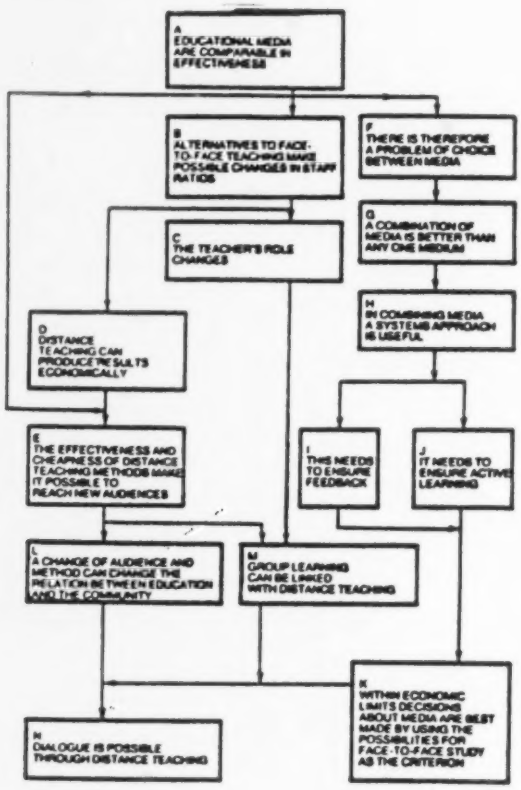
To be effective, distance-teaching materials should ensure that students undertake frequent and regular activities over and above reading, watching or listening.

Statement 14

In choosing between media, the key decision on which the rest depend concerns the use of face-to-face learning (Sewart, Keegan, & Holmberg,1983, pp. 36-42).

These statements can be put in diagram form to help illustrate their interrelationships in formulating what Distance Education is. See Figure 2.

Figure 2, Perraton Hypotheses Theory


A
EDUCATIONAL MEDIA ARE COMPARABLE IN EFFECTIVENESS
B
ALTERNATIVES TO FACE-TO-FACE TEACHING MAKE POSSIBLE CHANGES IN STAFF RATIOS
F
THERE IS THEREFORE A PROBLEM OF CHOICE BETWEEN MEDIA
C
THE TEACHER'S ROLE CHANGES
G
A COMBINATION OF MEDIA IS BETTER THAN ANY ONE MEDIUM
H
IN COMBINING MEDIA A SYSTEMS APPROACH IS USEFUL
D
DISTANCE TEACHING CAN PRODUCE RESULTS ECONOMICALLY
E
THE EFFECTIVENESS AND CHEAPNESS OF DISTANCE TEACHING METHODS MAKE IT POSSIBLE TO REACH NEW AUDIENCES
I
THIS NEEDS TO ENSURE FEEDBACK
J
IT NEEDS TO ENSURE ACTIVE LEARNING
L
A CHANGE OF AUDIENCE AND METHOD CAN CHANGE THE RELATION BETWEEN EDUCATION AND THE COMMUNITY
M
GROUP LEARNING CAN BE LINKED WITH DISTANCE TEACHING
K
WITHIN ECONOMIC LIMITS DECISIONS ABOUT MEDIA ARE BEST MADE BY USING THE POSSIBILITIES FOR FACE-TO-FACE STUDY AS THE CRITERION
N
DIALOGUE IS POSSIBLE THROUGH DISTANCE TEACHING

Moore's Transactional Distance Theory

Moore believes that instruction can be divided into two fields of study: face-to-face (contiguous) study or separate (noncontiguous) study. He distinguishes Distance Education from independent or self-directed study in that Distance Education requires formal evaluation and two-way communication with an educational agency . Moore categorizes both independent study and Distance Education in terms of *transactional distance*. Transactional distance involves two elements: (1) dialogue, and (2) structure. Dialogue refers to the two-way communication between a student and the teacher. Structure refers to the objectives, study methods, and evaluation tools and how they are adapted to the needs of the student (Verduin & Clark, 1991; Sammons, 1988). Figure 3 shows Moore's categories of transactional distance :

Figure 3, Moore's Model

Example	Program
1. Programs with no dialogue and no structure	Independent readings
2. Programs with no dialogue but with structure	Radio or telecourses
3. Programs with structure and dialogue	Correspondence study
4. Programs with dialogue and no structure	Rogerian tutorials

(Verduin & Clark, 1991, p. 122)

Verduin & Clark's Modified Moore' Model

Verduin and Clark (1991) felt that Moore's concept of dialogue didn't go far enough. They felt that the basic idea of dialogue is to provide support of one kind or another to the distance learner. The Field-independent students would only use dialogue to get answers about content, but the Field-dependent students are more likely to use dialogue to gain emotional support for their efforts. For this reason, they felt the first dimension of Moore's model ought to be called *dialogue/support*.

In Moore's second dimension, Verduin and Clark believe that in fields requiring a high level of structure the student must have a specialized competence in order to perform the learning activity; therefore, they conclude that the second dimension should be *structure/specialized competence*.

Verduin and Clark added a third dimension to their model: *general competence/self-directedness*. In this third dimension, their concern was that the student must possess certain skills necessary to accomplish learning at a distance: literacy skills, ability to study independently, ability to learn from a various media, and ability to write. The aspect of self-directedness is the andragogical principle of adult learning that states adults desire to study independently; however, the ability of an adult to discipline themselves to study is a critical element in having a successful learning experience.

Verduin and Clark (1991) take these three dimensions and generate twelve cases to describe characteristics of distance learning situations:

Case 1 *Low dialogue/support; low structure/specialized competence; low general competence/self-directedness.* This might be a student who participates in a conference at a site via one-way video and has no opportunity for interaction via telephone.

Case 2 *Low dialogue/support; high structure/specialized competence; low general competence/self-directedness.* This case describes most traditional correspondence courses: excellent instructional design which enables students to succeed, with minimal feedback if they run into problems.

Case 3 *Low dialogue/support; low structure/specialized competence; high general competence/self-directedness.* This problem-oriented, andragogical style describes most independent study courses or contract learning.

Case 4 *Low dialogue/support; high structure/specialized competence; high general competence/ self-directedness.* Distance educational programs for additional professional or vocational training generally fall into this category; they are highly structured and require self-directedness, but there is no interaction with the educational agency.

Case 5 *High dialogue/support; low structure/specialized competence; low general competence/ self-directedness.* An example of this type of Distance Education program would be The University of Wisconsin-Extension's Educational Telephone Network (ETN) with offers a wide range of non-credit discussion classes through it's audioconferencing system.

Case 6 *High dialogue/support; high structure/specialized competence; low general competence/ self-directedness.* This case describes most of what happens in elementary and secondary school and even some college/university classes.

Case 7 *High dialogue/support; low structure/specialized competence; high general competence/ self-directedness.* Many advanced classes in the humanities, graduate seminars and continuing professional education in fields such as education would fit into this category.

Case 8 *High dialogue/support; high structure/specialized competence; high general competence/ self-directedness.* Advanced classes in science and graduate seminars will generally fit into this category or Case 7 depending on structure of the course.

Case 9 *No dialogue/support; low specialized competence/structure; low general competence/ self-directedness.* This is unplanned and unsystematic distance learning

about a topic of interest through some media---this could be a program viewed on television.

Case 10 *No dialogue/support; high specialized competence/structure; low general competence/ self-directedness.*
Distance learning using textbooks intended for students of high-structure subjects, but the student lacking self-directedness will generally get poor results.

Case 11 *No dialogue/support; low specialized competence/structure; high general competence/ self-directedness.*
This represents much of what continuing education is in low structure disciplines--reading of journals and other material to keep abreast in a field.

Case 12 *No dialogue/support; high specialized competence/structure; high general competence/ self-directedness.*
This represents continuing education in professional fields that are highly structured---such as medicine.

Wilson's Model

Kaye's model is a rather historical systems approach and not as adaptive to new two-way communication technologies as it should be. His systems approach for understanding the student and some of the logistical issues does, however provide a basis for understanding some of the benefits of Distance Education.

Perraton's hypotheses theory does provide some verifiable assumptions that are adaptable to new technologies in the field of Distance Education. If one was evaluating an educational program based on Perraton's statements, one still would not be able to describe what Distance Education is. These statements are critical aspects of Distance Education but are not exclusive to Distance delivery programs.

Moore's work on transactional distance is an oversimplified model differentiating contiguous from non-contiguous study. Verduin & Clark's added dimensions to Moore's model are certainly helpful and do provide an excellent tool for classifying instruction. However, it is the author's opinion that their classification system is more for instruction and lacks the descriptive components needed to represent and understand what Distance Education is, and does not provide a theoretical basis for future planning and adaptation of the concept. In keeping with the definition of Distance Education,

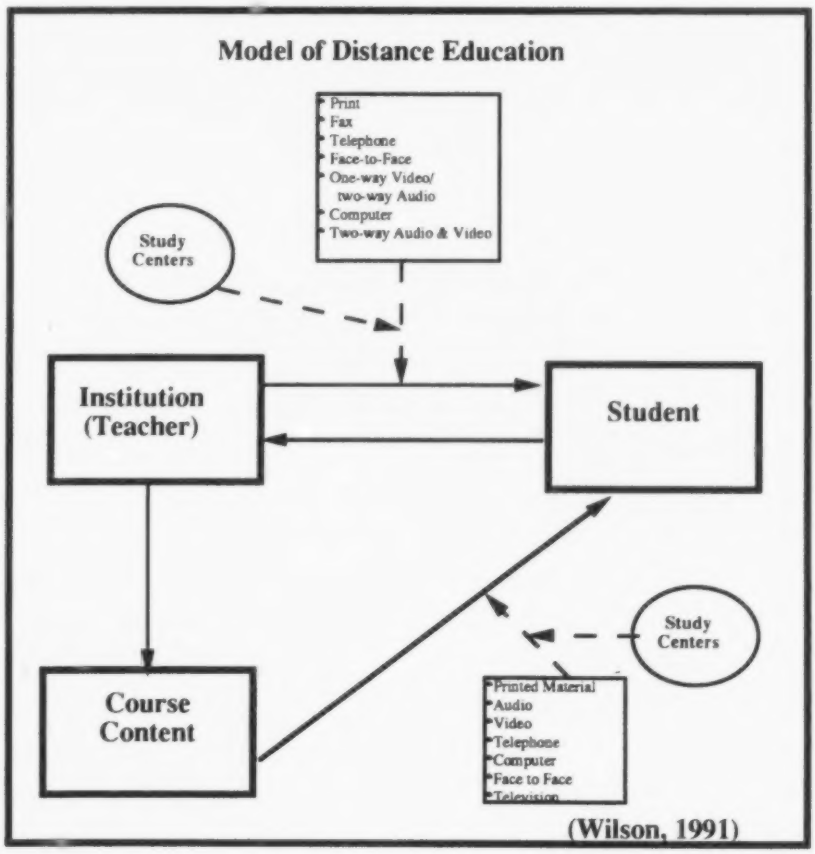
"Distance Education is Education at a Distance",

the author believes that a model should simply represent what Education is and give the option for the student to study at a distance from the institution (teacher). Shale (1988) summarizes what the ideal educational process as follows:

1. Teacher and student engage in an initial two-way interaction that facilitates the teacher's appreciation of the student's existing state of knowledge and which permits the student to recognize that which is known. This is essentially the process of validating what the student knows.
2. On the basis of this mutually derived sense of what the student knows, the teacher may provide, directly or indirectly, additional declarative knowledge.
3. On the basis of what was previously known, and what the student has learned in the second phase, through dialogue the teacher and the student generate perceptual knowledge or they negotiate meaning from inquiry. The assumption is usually that this will occur predominantly in the student, through steps of clarification with the teacher; however, in the best of educational exchanges the teacher also gains in understanding.
4. Through iterations of phases two and three, teacher and student advance in their knowledge, the student comes to recognize what he or she knows, as does the teacher, thus validating the knowledge acquired (p. 28).

The author's model (see Figure 4) uses Shale's model of the educational process and adds options (which are depicted by broken lines) that provide "bridges" for the educational process for the student at a distance. Course content can be transmitted by one or more of the listed mediums and can be facilitated through a study center. The interactive processes of education can be achieved through a combination of one or more of the listed media and can be facilitated through a study center. This model describes the historical approach of mass production of primarily print-driven correspondence programs but it also represents the trend towards "de-massifying" Distance Education through the use of new two-way communication technologies that offer immediate feedback.

Figure 4 Wilson's Model for Distance Education



Typologies in Distance Education

When attempting to classify Distance Education, one can expect that no two scholars are going to agree on how to classify the field. Many of the following typologies have an international orientation; however one presented in this section reflects a U.S. orientation and Verduin & Clarks' will become the basis for further discussion in this paper.

Verduin and Clark's (1991) typology seems to provide the simplest and yet most comprehensive one for classifying Distance Education today. Their typology is a classification of institutions offering distance delivery programs; the typology does reflect the kinds of programs offered in the United States.

Type I

Type I institutions are postsecondary educational institutions offering college degrees to student whom they haven't taught. These institutions offer degrees through a combination of proficiency examinations, credit for equivalent academic work and experiential learning, portfolio evaluations or prior learning, and work experiences. Some examples of institutions offering Type I programs are:

> Regents College which is a part of the University of the State of New York (USNY), started in 1970 ---it has no resident faculty, no campus, or resident student body. By 1990, Regents had graduated 46,000 students and currently there are about 8,000 enrolling each year . Regents basic concept is: "people with knowledge equivalent to that denoted by a college degree should be able to earn a degree by demonstrating that knowledge regardless of how it was acquired" (1991, p. 36). Regents has been the pioneer in developing proficiency exams which are are prepared by over 500 college and university faculty members from state institutions acting as consultants to USNY; their examinations are now available outside of New York through American College Testing/Proficiency Examination Program (ACT/PEP).

Empire State College is also in New York and is part of the State University of New York (SUNY) system. It was founded in 1971 and has graduated 15,000 students and enrolls about 6,400 annually at over forty locations. Empire's program is different than Regents in that they do have about 113 full-time and 225 part-time faculty members; each of the 40 learning sites has between eighteen and twenty faculty members who serve approximately 500 students at each site. Empire assigns a faculty member (who is permanently affiliated with another postsecondary institution) to each student to serve as a mentor--to plan, coordinate modes of study, instruct in their field, contract for tutors in other fields and generally guide and assess the academic work of the student (1991). Empire's primary mode of instruction is learning contracts: "specific, negotiated plan of study, covering a particular period of time, yielding a fixed number of credits, and including specification of resources and an agreed mode of evaluation" (1991, p. 42). Empire State College's mission statement exemplifies the purpose of Type I institutions:

- Creation of alternative structures and programs to increase access for those unable or unwilling to study on campus
- Development of academic content responsive to individual purposes and emerging social needs
- Devising of educational methods that can serve diverse students with widely varied needs
- Ensuring of program quality at reasonable cost. (1991, p.41)

Type II

This classification includes postsecondary educational institutions offering degrees to students whom they have already taught. Course credit may be earned through the same means as Type I institutions; however, an additional aspect is the development of external degree programs in which over half of the academic work is completed away from the traditional on-campus program.

These institutions are noted for their flexibility of learning options which allows a student to follow either a conventional program or choose to study mostly at a distance from the institution. Examples of the Type II institutions are:

Stephens College Without Walls Program was one of the twenty-five University-Without-Walls programs founded in 1971. Students are required to complete a liberal studies seminar and then work with Stephen's faculty in completing 120 credit hours for their degree through independent study, intensive or conventional classes and weekend seminars.

Nova University has gained respect from the traditional academic community particularly for its regionally accredited, field-based graduate programs. Nova was founded in 1961 and offers conventional programs on its Fort Lauderdale, Florida campus; however, it best known for its field-based "clusters" that operate in twenty-four states and three foreign countries. A cluster is a group of students in a particular area who are assigned a professional in their field of study to coordinate their academic program and to serve as a liaison between students, Nova University and the faculty. Students in these clusters are expected to keep pace with fellow students in their cluster, and generally take 3-4 seminar classes a year. Nova's paradigm for doctoral programs in Higher Education has been emulated by many other nontraditional graduate programs (1991).

Type III

Type III institutions are traditional universities that offer Distance Education through extension, independent study, or continuing education. Most institutions operating in the United States fall into this category. Some example of Type III institutions are:

Pennsylvania State University's Department of Independent Learning leads in overall enrollment with 22,000 students (14,000 in non-credit classes) studying at 250 locations or independently.

They do offer a bachelor degree program that is entirely independent study; however, their overall mission is mainly to supplement residential instruction (1991). Many of their independent study courses are offered over their cable television network, Pennsylvania Learning Network (PENNARAMA) which is a result of a consortium between the University and Pennsylvania Education Communication Systems.

Southeastern College of the Assemblies of God's Continuing Education Program offers an external degree program; its mission is: "To provide to the adult learner the opportunity for personal or professional development as related to Biblical, ministerial, and theological studies utilizing independent study delivery systems to provide means for recognizing measurable prior learning experiences, while maintaining standards of knowledge, competence, and intellectual attainment which are comparable to those established for resident programs" (Southeastern, 1990). Southeastern's program is one 16 external degrees programs offered by regionally accredited institutions in the United States (personal communication, T. Wilson, April 4, 1991). Credit can be earned through their independent study courses (some of the courses were produced by International Correspondence Institute (ICI), Brussels, Belgium---accredited with National Home Study Council (NHSC); through college credit transfer from accredited institutions; through guided instruction via telephone and mail; through credit for prior learning; through learning contracts; through credit by examination such as CLEP, DANTES, APA, ACT-PEP, TECEP; and through faculty-produced examinations.

Type IV

Type IV institutions are consortia of education-related institutions formed to provide distance courses in related disciplines or over a wide geographical area. A consortium is a "formal organization of two or more member institutions, administered by a director, with tangible evidence of member support" (Verduin & Clark, 1991, p. 53).

Consortia are generally formed in order to share the cost of expensive delivery systems (i.e., satellite broadcasting) that would be prohibitive for any one institution. Consortium members each grant their own credit for participation; but this does establish degree of uniformity within the field of Distance Education (1991).

Examples of consortia are:

> Emergency Education Network (EENET) is a Federal Government sponsored network for providing non-credit training nation-wide in fire science. Local Fire Departments are able to receive training programs by being an authorized receive site (requires a TeleVision Receive-Only "dish") or through local cable network (FEMA, 1989).
>
> LearnAlaska Network is one of the largest networks in the world; it consists of audio conferencing and low-power television and satellite broadcasts. LearnAlaska's audio conferencing handles more instructional conferences per month than any other similar facility in the world. The system has 320 audio conferencing sites and can link up to 80 sites together in a conference call. LearnAlaska has the first and largest low-power TV network with over 240 communities receiving the LearnAlaska signal. Most communities in Alaska can receive the LearnAlaska Instructional Television signal, which uses the Satcom V. satellite; 30 sites have the capability of uplinking their own locally originated programming to the satellite for broadcasting throughout Alaska. By 1984, LearnAlaska had nearly 12,000 students taking over 600 courses which included programming for preschool, K-12, postsecondary/higher education and credit or noncredit continuing education (Sponder, 1990; Wilson, 1991).

Type V

Type V are autonomous institutions established for teaching Distance Education Students. These autonomous institutions have been established around the world where the educational infrastructure is not well developed or where access to higher education is highly restricted.

Most of the these postsecondary institutions have been modeled after the Open University (OUUK) in the United Kingdom where over 70,000 students have received their bachelor degrees since 1971. Other similar institutions have been established, such as, Athabasca University in Alberta, Canada and Tele University (T-U) in Quebec, Canada. The only postsecondary Type V institution operating in the United States is International Correspondence Institute.

> International Correspondence Institute (ICI) was developed and established by an organization in the U.S. and is accredited in the U.S., but has operated from Brussels, Belgium for the past twenty years. It is now in the process of moving its international headquarters to Dallas, Texas. ICI presently has 9000 college level students in over 100 countries who are served through a system of 120 national ICI offices operating throughout the world. ICI's print-driven correspondence program offers three academic programs: diploma, associate degree and bachelors degree in Bible/Theology and Christian Education (Personal Communication, G. Flattery, Sept. 28, 1990). ICI has also established cooperative agreements with conventional residential institutions in many countries; in these institutions, ICI courses are facilitated through residential programs in order to provide a high quality educational program or to offer a U.S. accredited program. ICI's degree level courses are presently being incorporated into external degree programs in two regionally accredited institutions in the U.S.: Southeastern Bible College in Lakeland Florida, North Central Bible College in Minneapolis, Minnesota.

Type VI

Type VI category includes those institutions who produce educational programs through various media and are used without the assistance of the organization producing them by an informal distance learner. This category probably represents the greatest number of students who use educational material for self-directed learning. This could be everything from Public Broadcasting programs offered on television to the use of self-help courses on learning a foreign language.

Distance Delivery Programs

The field of Distance Education is reaping the benefit of a new technology in the area of communications which will ultimately shift Distance Education more into the mainstream of education. In this section the variety of modes and systems that can be used in Distance Education will be presented, including strengths and weaknesses of these distance delivery modes. Burnham and Seamons (1987) state that with all the "technological changes and improvements, the future seems encumbered with even more conceptual confusion and technological preoccupation than is presently the case". This section will endeavor to bring some clarity and understanding to the expanding world of technical jargon and the myriad of acronyms in Distance Education.

Audiocassette

Verduin and Clark cite that "...the greatest media development during the twelve years of its existence has been the humble audiocassette" (1991). Western Interstate Commission on Higher Education (WICHE) surveyed 344 private and public postsecondary institutions in 13 western states and concluded that 29% of the institutions use audiocassettes for off-campus instruction and 66% for on-campus instruction. The WICHE report concluded: "Audiocassette was the most popular form of audio technology for instructional purposes, more than radio, teleconferencing, and telephone" (1991). The Open University (OUUK) uses audiocassettes extensively and cite the cost factor and the ease of use as some of the benefits. Audiocassettes used with printed material produce a powerful teaching tool. The disadvantage is the lack visual presentation, and it does not allow for student/teacher interaction.

Telephone

Telephone in Distance Education allows two-way communication between a student and an instructor; through conference calls, any number of student may be linked together with the instructor. Wagner and Reddy (1987) comment that "teleconferencing can stretch the availability of existing personnel, but it also can link geographically dispersed groups".

Perry (1984) surveyed 304 institutions offering 468 programs in 80 nations and found that the telephone was used at all levels (Verduin & Clark, 1991). Sponder sees the benefit of using the telephone as an instructional tool in Alaska is that it is available at almost any locale, it is relatively inexpensive and the familiarity of the technology makes teleconferencing an "attractive instructional system when choosing among distance education alternatives" (1990). One of the most extensive telephone networks for educational purposes is Wisconsin's Educational Telephone Network which enrolled 32,000 students in 1980 (Verduin & Clark, 1991). Some of the advantages have already been mentioned; in addition, teleconferencing is now being used in combination with one-way video broadcasts which enables students to participate in a "live" classroom. The telephone alone allows for immediate feedback from the instructor; however, it does not provide visual stimulus in the instructional process. LearnAlaska is also using telephone lines for transmitting notes, examinations and other printed information using FAX (facsimile transmission) (Wilson, 1991).

Radio

Radio has been used at the Milwaukie Area Technical College and the University of Wisconsin developed the "University of the Air." The WICHE survey (13 western states) found that 7% of the institutions used radio for off-campus instruction (Verduin & Clark, 1991). Radio has played a "quiet but steady role" in America; however it tends to have a more significant role in developing countries which have low literacy rates and cannot afford more expensive technology. Key advantages of radio are the low cost and immediate availability; the disadvantages are that it lacks a visual component and does not allow interaction with the instructor.

Telecommunications

The use of television in distance delivery was probably the most exciting tool in the 1970's; however, with the rapid growth in two-way communications, the field of Distance Education is on the threshold of major shifts toward providing immediate feedback and participation in interactive instructional processes through the use of alternative electronic communications.

Telecommunications refers to the use of "a communications medium that allows groups and/or individuals to interact from distant multiple locations using telemetric technology such as audio (telephone), audiovisual (satellite-transmitted television and videotaping), and computers (electronic data transmission)" (Anderson,1987).

The key in the use of telecommunication is not just the use of multi-media communication , but on *integrated* multi-media communication, which will require collaboration amongst communication specialists (Moore, 1989). Components and combinations of telecommunications are numerous. What follows will provide a survey of the components and some current combinations being utilized in Distance Education.

Telecourses

Telecourses--courses which can be viewed by students at home on television--gained popularity in the 1980's. PBS Adult Learning Service (ALS) works with public television, Annenberg/CPB Project courses, colleges, and other independent producers to develop courses that combine video, text, and other sources. By the end of 1988, over 1,500 colleges and 300 PBS stations had teamed up to provide over 1 million enrollments in telecourses (Moore, 1989;Verduin & Clark, 1991). Chemeketa Community College in Salem, Oregon offers between 15-20 telecourses [mostly ALS produced courses] each quarter which students view over Oregon Public Broadcasting channels or on cable channels. Chemeketa presently has 560 students enrolled in telecourses. Chemeketa also stocks the telecourse videos in their Library and Outreach Centers so that if students miss the course broadcast on television, they can view the lecture at their convenience (Personal Communication, D. Carver, April 15, 1991, O'Harra and Wasson, 1988).

Microwave Broadcasting

Microwave broadcasting is similar to Cable Television (CATV) but is able to reach nonwired viewing sites through instructional television-fixed service (ITFS). It uses lower-power microwave to broadcast to sites generally not more than twenty miles away.

Microwave transmission is used in large-scale educational television systems such as PENNARAMA [a statewide system linking cable television in thirty-one Pennsylvania cities via a microwave trunk]; Indiana Higher Education Tele-communication System (IHETS) [connects the major institutions of higher education in Indiana through a microwave relay system]; and Learn-Alaska Network [connects 240 communities through a microwave relay system throughout the northern portion of Alaska] (Verduin & Clark, 1991; Sponder, 1991). Microwave broadcasting is generally one-way video; however many institutions, such as Chemeketa Community College, provide interactive systems between their Outreach Center sites and the originating site [from an interactive classroom] through teleconferencing during live broadcasts.

Satellite Broadcasting

Satellite broadcasting has been possible since the creation of geosynchronous satellites in the 1960's. Satellite broadcasting is transmission of a television signal from a point of origin through an encorder ("uplink") to a satellite. A satellite transponder strengthens the signal for transmission to a decoder ("downlink"). Accompanying the video signal are two-way audio signals which are carried across telephone lines in a manner similar to audio or teleconferencing. The teleconferencing allows for interaction between the originator and the receive sites during the broadcast (Wagner & Reddy, 1987).

Due to the high cost of equipment for satellite communication and the cost of transponder time on a communication satellite, consortia have been established to share the cost and benefit of this new technology. The National University Teleconferencing Network (NUTN) now has 250 organizations either providing or receiving more than one hundred college programs. National Technological University (NTU) has fifteen universities that can originate broadcasts and has twenty-four colleges are receive sites. Numerous national associations are using satellite broadcasting to provide continuing education on a nationwide basis.

American Telephone and Telegraph (ATT) provides training to their 20,000 employees at 130 sites at a net savings of $497 per person per year (Moore, 1988). The potential for international collaboration has been the topic of a recent conference, World EDNET '88, in which they proposed to take:

> necessary steps to put into operation an international electronic university employing state-of-the-art computer, telecommunications and television technology, which would disseminate courseware, research data, scientific documents, and other materials over a network connecting educational and research institutions globally; i.e., among countries anywhere in the world that are willing to associate with the university for educational and research purposes (1988).

Compressed Video

Pennsylvania State's PENNARAMA is beginning to use digitized TV signals which take up less space on a signal than an analog telecommunication system; this "compressed" signal will enable two-way video broadcasting. At the present time, equipment to operate the integrated services digital networks is expensive; however, as the technology continues to develop the price will become affordable for most networks. Many feel that in the near future, compressed video will replace the current telecommunications systems; the implications of two-way video/audio for Distance Education will ultimately mean that the gulf between conventional higher education and Distance Education has virtually been "bridged" (Verduin & Clark, 1991).

Interactive Video

Interactive video is a synthesis of computer and video technology. The video material (video disk) can be viewed in a traditional way or may be retrieved and mixed with computer-generated text. California State University, through its Instructional Television Fixed Service (ITFS), utilizes a traditional video broadcast, yet is adaptable to be computer-controlled video disk and computer-generated text.

ITFS is presently using this technology in their Statewide Nursing program to offer a baccalaureate degree in nursing at selected hospitals throughout California (Anderson, 1987).

Videocassette

The use of videocassette enables any one-way broadcast (telecourses) to be recorded on a videocassette and used by a student at a later date. Brush and Brush found that 8500 for-profit and non-profit organizations spend $2.3 billion in producing videocassettes for training, communication, and promotion (Verduin & Clark, 1991). Over 1,110 postsecondary-level video courses have been produced (1991). The advantages of videocassettes are: it offers a student both a visual and audio signal, it is easy to use and is readily available. The disadvantage is that it does not allow two-way interaction with the instructor.

Computer-Assisted Instruction

Computer-Assisted Instruction (CAI) involves (1) the presentation of instructional material to the student and (2) then the student interacts with the instructional material through series of commands and responses to the computer. CAI involves 6 modes: drill and practice, tutorial, gaming, simulation, discovery, and problem solving. Some experts feel that CAI, which is most suited for question and answer instruction, does not fit an andragogical style of instruction which most adults prefer. Possibly CAI could be effectively used for remedial instruction and skill training that requires drill and practice (Verduin & Clark, 1991).

Computer-Managed Instruction

Computer-Managed Instruction (CMI) involves the use of computers for a variety of applications in the administrations of individualized instruction. Through the use of modems, institutions can communicate with students, perform testing, and send information or additional instructional material via the computer (1991). LearnAlaska Network uses the State's computer network in order to provide an electronic mail service for their rural students at their Rural Centers (Wilson, 1991)

Computer Teleconferencing

Computer Teleconferencing (CT) provides for communication from one computer to another by means of a modem and common carried telephone lines. CT is primarily concerned with the transmission of textual or graphic data (1991). The potential for participants to simultaneously interact with others through written form is possible provided their equipment and software will interface with each other. LearnAlaska Network is using CT more with staff than with students. CT will allow immediate feedback; however, personal aspects of the audio or the visual appearance of the instructor are missing from this mode of delivery---the personal touch is reduced to only text.

Print-Driven

As the Bible says, "The last shall be first". Print-driven programs are the oldest form of distance delivery instruction, and the most common. They will probably continue as the most widely used in the near future. Print-driven [correspondence courses] programs, generally include text and study-guide and interaction between the student and the teacher is facilitated by mail. The major benefits of print-driven programs are: it is familiar, inexpensive, portable and does not require additional equipment. The disadvantages are: there is rarely any face-to-face contact with the teacher, feedback takes longer, the use of audiovisual materials is limited, and it requires that the student have proficiency in the written instructional language. In the preceding sections, the author will address other key issues related to the use of print-driven programs and how some of the disadvantages can be overcome. Print-driven programs will remain viable, especially for developing countries and organizations that can not afford all the "bells and whistles" of "high tech" communication systems that are developing in Distance Education.

Choosing Delivery Systems

In selecting delivery systems for Distance Education, educational planners all too often are ruled only by cost-effectiveness of instruction. Instructional design and selection of delivery systems should also involve other criteria:

- Needs assessment: learning or performance problems
- Program goals
- Instructional objectives
- Student learning styles
- Student familiarity with instructional strategies
- Environmental factors effecting message transmission
- Cultural factors
- Density and diversity of target population
- Accessibility of delivery systems in target area (Rumble & Harry, 1982)

Bate's extensive research in distance learning systems concluded that:

1. There is a clear movement away from using broadcasting by distance learning systems.
2. The range of audio-visual media suitable for distance education is rapidly increasing.
3. The educational potential of audiovisual media still tends to be under-exploited by distance learning systems. (Rumble and Harry,1982)

Instructional Considerations in Distance Education

The Distance Student and Learning

In considering the use of Distance Education in Higher Education, one most consider: (1) the kind of student who generally is attracted to distance delivery programs, (2) what motivates the individual to choose this format of instruction and (3) what factors will effect their ability to learn using distance delivery. These questions and other relevant issues will be discussed in order to assist the educational planners as they consider Distance Education.

Who is the Distance Learner?

Some general characteristics of a Distance Learner (DL) have been determined in recent surveys.

1. The DL is generally older. Kaye (1981) sets an age range between 20-40. A survey of 5000 students at Empire State College concluded that average was 37 (Verduin & Clark, 1991). Love's (1989) research of International Correspondence Institute's (ICI) 1988 graduates showed the average age was 32.7 years.

2. Most DL are professional people who go to school part-time. Research of seven University-Without-Walls programs concluded 66% were employed full-time. The Annenberg/CPB Project funded a survey of 8000 telecourses students and they found that 80% were employed (Verduin & Clark, 1991).

3. Most DL are women; however this seems to be a trend only in more developed countries, where "the emancipation of women is in process" (Kaye, 1981).

The Annenberg Project survey showed that 68% were women (1981), and Empire State College also mentioned that the average student is a woman.

4. Most DL are white. All surveys concluded that not only the average student was white, but a majority of students were white (Annenberg:84%; University-Without-Wall: 75%) Verduin & Clark, 1991).

5. Most DL are married. ICI's survey of graduates showed that 75.5% were married (Love, 1989); the Annenberg Project showed that 54% and Empire State College's survey also showed the average student was married (Verduin & Clark, 1991).

Why do Adults Choose Distance Education?

1. Annenberg Project found that a DL studies at a distance because going to on-campus classes conflicts with their work (41%) or with leisure time (12%) (Verduin & Clark, 1991). Schrader's survey states that 64% of the students studied at a distance so that it wouldn't conflict with their work schedule (1991).

2. Annenberg Project concluded the second most important reason (51%) for choosing Distance Education was to minimize travel (Schrader's research revealed 60%) (1991).

3. Harry and Rumble's survey of nine Distance Teaching Universities (1982) found that adults choose Distance Education instead of conventional universities because of social, economic or geographical reasons. Another factor that is not distinctly separate from the first two mentioned is that people choose Distance Education because they are "tied" to the home or live in institutions.

What Factors Effect Distance Learning?

Brookfield (1985), Moore (1989), Spear & Mocker (1984), Oddi (1986), Brockett (1984), Schuttenberg and Tracy (1986), Verduin and Clark (1991), Atman (1988), and St. Pierre (1990) all follow Malcolm Knowles's andragogical model which makes the following assumptions:

1. Adults' self-concept moves from one of dependent personality to self-directed human being
2. Adults accumulate a growing reservoir of experience that becomes a rich source of learning
3. Readiness to learn becomes increasingly oriented to their developmental tasks of their social roles
4. Shift to immediate application as their orientation of learning shifts from subject centeredness to performance centeredness.

The adult desires self-directed learning and comes to the educational setting with a readiness to learn, usually with specific need as result of a life changing event. Adults desire student-centered, problems-solving, hands-on, and task oriented instructional events.

Summarizing the current literature, one concludes that students learn when all of the above conditions are considered plus the following conditions which are more specific to Distance Education:

1. Self-pacing is allowed
2. Feedback is in the "fastest turn-around time that is feasible"
3. Course and program completion goals are set by the student
4. Interaction with institution is friendly and nonthreatening
5. Curriculum is structured to guide the student in linking instruction with previous knowledge and interests
6. They are self-motivated

What effect do learning styles have on Distance Education?

Brookfield (1985) [who cites the work of Witken and Pratt] has examined the relationship between cognitive styles and self-directed learning. Using the "Embedded Figures Test" (EFT) researchers can classify an individual as *Field Independent* (FI) [those who have a preference for solitary situations and self-defined goals, strategies and reinforcement] or *Field Dependent* (FD) [those who prefer group situations, externally defined goals and reinforcement, and explicit instructions or definitions].

Brookfield (1985) and Moore (1989) both feel that FI is a learning style that is more associated with the andragogical ideas of self-directedness. FI learners tend to come from open democracies, which encourage freedom and autonomy and FD learners are more comfortable with rigidly controlled societies where conformity to imposed patterns and behavior and authoritarian control is valued. Verduin and Clark (1991) cites Chickering's research which concluded that FD learners are more likely to drop out of Distance Education and Thompson and Knox' research that concluded correspondence students are more likely to be FI learners.

The literature does indicate that FI learners are more likely to succeed at Distance Education ---the questions is, how can Distance Education serve the developing world-- most of whom are probably Field Dependent? It is the author's opinion that in order for FD learners to succeed at Distance Education programs, external controls and more structure will be required. The use of study centers, mentors and other facilitative interventions will be needed to provide structure, assistance, deadlines, and goals in order for the FD learner to succeed.

International Correspondence Institute (ICI) had 73.3% of its 1988 (Love, 1989) graduates in the world from Africa [who are classically FD]. It is the author's analysis that the reason for this is that the majority of the African students studied ICI in study centers [cooperative institutions who facilitate the ICI degree program].

This analysis needs to be a topic of future research: "Do study centers open the door of Distance Education to FD learners?" Distance Education can serve both cognitive styles as long as program planners allow for flexibility and adaptability to accommodate both groups of learners.

Teaching in Distance Education

Issues in Distance Teaching

One of the purposes of this paper is to bring clarity and understanding to some of the issues that are effecting Distance Education's integration with Higher Education. Issues are shrouded in controversy and will continue to present a "road block" to dialogue and participation unless the key aspects of the debate are "bridged" through discussion and interaction. Two critical issues are presented for discussion.

Can an instructor teach without face-to-face contact with the student?

Obviously, two other questions must be answered before one can deal with the issue: (1) what is teaching and (2) is face-to-face contact necessary? Seaman and Fellenz (1989) define adult teaching as:

> The activity through which the teacher or learning facilitator assists the adult student in acquiring new knowledge or skills. (p. 5)

Shale's (1988) understanding of teaching is rather classical; he refers to what King and Brownell called, "The Great Conversation":

> In this educational relationship, the student will come equipped with the knowledge acquired through other educational experiences and private knowledge that may have been acquired directly through personal experience or indirectly through secondary sources such as books. In the classical and ideal senses of the scholar, the exchange between teacher and student is at the level of negotiating meaning (p. 29).

The second part of this issue deals with the value of face-to-face contact. The important point is that teaching requires interaction, dialogue, feedback, and encouragement between the teacher and the student. Does this interchange have to be face-to-face? The critical point of this answer is that most research (St. Pierre, 1990 and Feasley, 1983) suggests that the quality of interaction and the frequency of interaction is more important than whether or not it is face-to-face.

David Grossman, in an article in the Chronicle of Higher Education, expressed his concern that the use of "packaged" television courses creates some negative consequences to mediated instruction (Strain, 1987). Otto Peters presents an opposite view: he compares distance teaching to an industrial organization. Peters' theory talks about the mass production of learning materials, mechanization, automation, quality control and other operational activities. Peter would say that one doesn't teach in a personal, face-to-face mode, but rather the teacher dispenses a cost-effective educational system, reaching large numbers of students (1987). The author is inclined to support Grossman's argument: teaching is an interactive, social process and that presenting a telecourse or mass producing learning material is not teaching at a distance.

It is the author's opinion that Higher Education's concern for face-to-face instruction would be more correctly articulated as the need for high-quality and frequent interaction---which is the key element of education--a "social process" (Shale, 1988). Students sitting in a large survey class do have face-to-face contact with an instructor, but is that a "guarantee" of quality instruction; or is high-quality and frequent interaction with an instructor a more essential element of the instructional process? Production of printed material or of a video course is nothing more than presentation of instructional material unless it is accompanied by "meaningful and active" participation with an instructor. Teaching, regardless of whether it occurs in a classroom or at a Distance, requires interaction between an instructor and a student. Sammons (1988) comments that "it is in dialogue that learning occurs".

Does Distance Teaching require special skills and training?

The common practice in campus-based Distance Education programs is to use the existing faculty to produce and/or facilitate the instructional process. This practice often puts a heavy workload upon the instructor which causes their classroom responsibilities to suffer and the quality and amount of time to assist the Distance Learner is diminished. Feasley cites Lombardi's survey which concluded that the majority of distance learning faculty in the United States were working part-time for the non-campus institutions (1983). The implication seems to be that Distance Teaching is not perceived as a unique discipline within the field of teaching requiring special skills, knowledge, or attitudes.

To resolve the controversy surrounding this issue, one first needs to answer the question, are there field-specific roles and competencies for Distance Teaching? Literature (Mayton, 1989; Atman, 1988; St. Pierre, 1990; Feasley, 1983; and Stoffel, 1987) on the subject of Distance Teaching has identified several skills for Distance Teachers:

- Imagines what the students need
- Inspires the students
- Encourages them
- Likes people
- Is alive
- Provide feedback
- Motivate students
- Skill
- Tolerance
- Cooperation
- Flexibility
- Innovation
- Two-way written communication
- Establish personal rapport

Mayton (1989) and Swift's (1987) research endeavored to identify competencies related to distance teaching. Mayton surveyed 56 administrators in member institutions of the National University Continuing Education Association. A total of nine teaching competencies were ranked in order of their importance for independent study:

1. Promptness in returning lessons or assignments
2. Ability to communicate in writing
3. Knowledge of content area
4. Provision of pertinent comments on a student's work
5. Willingness to incorporate teaching techniques suitable for independent study
6. Understanding the needs of the independent learners
7. Willingness to respond to students questions and problems
8. Interaction with students to reinforce and motivate
9. Belief in and support for this method of instruction (p. 53)

Swift (1987) surveyed 388 students in the Women's External Degree (WED) at Saint Mary-of-the-Woods College. Swift used an open-ended evaluation form and took the first two comments mentioned. The list is presented in ranking order :

	Number of Times Mentioned
1. Provided feedback	121
2. Prompt response	110
3. Helpful	90
4. Encouraging	64
5. Available for questions	33
6. Supportive	29
7. Compassionate/kind	25
8. Good Teacher	19
9. Patient	16
10. Thorough explaining of material	13

The literature and research does indicate specific skills and competencies are needed for those that teach in Distance Education. It is interesting to note that the most important skills are feedback and promptness in responding to the student. It appears that the distance learner considers the interaction with the instructor more valuable than the course content. This conclusion is clearly articulated by Garrison and Baynton (work cited by Sammons, 1988):

> The most important attribute of distance education is not the independence associated with the non-contiguous nature of the transaction. It is the educational experience itself, the complex interaction between teacher and student which goes beyond simply deciding what is to be learned. (p. 9)

Billings (1988) research showed that success in course completion through independent study hinged on completing the first lesson within 40 days. Billing's work on course completion and Mayton and Swift's work on competencies all point to the need for training distance teachers so that the student will be successful when studying at a distance. The research presented in this section should also be used for establishing criteria for selecting distance teachers.

Roles of a Distance Teacher

When one considers the role of a distance teacher, the tendency is to compare the role with a traditional classroom teacher. However, the role of an adult educator is also changing from a teacher-centered (pedagogy) to a student-centered (andragogy) approach. Statements such as "cooperative learning" and "the development of effective partnership between the student and lecturer, and "the promotion of student-centered reflexivity" (Sammons, 1988) are all a part of the new roles in teaching adults. Unfortunately, Higher Education is often lagging behind, draped in their academic paraphernalia, the defender of the "seven liberal arts", failing to understand that the one they serve wants to have some control in the learning experience and to be treated as an adult learner.

The roles of a distance teacher reflect Distance Education's shift towards providing student-center teaching; organizational and program planning within an institution will alter the roles of the distance teacher.

Altered Traditional Role

The altered traditional role is the distance teacher who alters existing instructional material, facilitates its delivery, interacts with the students throughout their educational process and evaluates their progress. This is the case with most campus-based programs, such as Oral Roberts University's Center for Lifelong Learning. The University assigns course development projects to existing faculty who already teach the course, assists them in altering the instructional material, and then assigns them independent-study students whose progress they monitor through the duration of the course. Satellite courses utilizing two-way audio or compressed video would be another example of an altered traditional role.

Facilitator Role

The Distance Teacher is often cast in the facilitator role more out of default than by design. The "default" facilitator role is assigned when the instructor guides students through a well-defined educational process without having any control over that process. An example would be a study center in Nigeria facilitating a group of students through an independent study course with International Correspondence Institute; generally, the "instructor" has no input into the development of the material, course requirements, or evaluation tools.

The facilitator role is assigned "by design"--on purpose, if you will--to assist the students:

1. To use learning resources
2. To define their needs
3. To assume responsibility for defining their learning objectives
4. In organizing learning related to learners' problems and understanding
5. In decision making

6. In problem solving
7. In the development of self concept through experiential, participative and projective instructional methods. (J. Mezirow's notes on Role of the Facilitator)

The facilitator guides and enriches the learning of students, realizing students learn at different rates and by different styles. He/she also realizes that students desire to exercise a degree of autonomy over their learning (St. Pierre, 1990). It is the author's opinion that the facilitator role "should" be the normative role for most "packaged" telecourses and correspondence courses. Strain's (1987) comment that telecourses need "the altered roles of teachers" who are no longer "creators of instruction", but rather "managers of resources and students".

Mentor Role

The mentor role is similar to the facilitator; however, many institutions, such as Empire State College, assign a mentor for each Distance Learner. The mentor assists the students by answering questions as they use the instructional material, guide them to additional resources, give emotional support, and orchestrate group and individual meetings, and evaluate student progress (Feasley,1983). Empire State College mentors help plan and coordinate modes of study, instruct in their own field, contract for tutors in other fields, and generally guide and assess the academic work of the students (Verduin & Clark, 1991). The line of demarcation between mentor and facilitator is slight in terms of process; in terms of function, the mentor usually establishes a long-term relationship in which the mentor guides the student's progress throughout an entire program; while a facilitator guides the student's progress through one specific course.

Opportunities and Challenges in Distance Education

Effectiveness of Distance Education

The question that the educational program planner needs to ask is, "Is Distance Education an effective instructional system?" Mayton (1989) cites from Delling a rather humorous, but pointed view of the effectiveness of Distance Education:

> Which medium allows the learner to study at any time he likes? Which medium allows the learner to study at his own individual pace (which can even vary within the course of this study)? Which medium allows the learner to repeat a sequence at any time and however often he likes? Which medium allows the learner to alter his study material and then to regard these modifications as ineffective at will? Which medium can be used without apparatus or special material conditions? Which medium can be easily transported and used in many different places at the will of the learner? Which medium can be used by the learner without disturbing other people in the same room? (p. 22)

However, personal bias towards any instructional system must be set aside and Distance Education must be subjected to the rigors of meaningful research with conclusions that are substantiated by empirical data.

Clark and Verduin (1989) summarize some of research findings about the effectiveness of Distance Education:

- Chu and Schramm compiled 421 studies of television learning at all level and Kulik, Kulik and Cohen performed a meta-analysis of 54 studies comparing computer instruction with classroom teaching: students using educational media do as well or better than students in conventional programs.

- Childs and Maken found that performance of distance and conventional student in the same course was academically equivalent.
- Clark's survey of 21 American and ten international studies showed that distance students achieve as well as their conventional counterparts both in America and international programs.
- Grimes, Nielsen and Niss'(1988) study on the telecourse Economics U$A [sic] conducted at Western Illinois University concluded that telecourse students knew more about macroeconomics than traditional classroom students.

Open University (OUUK) surveyed its graduates and the findings certainly validate the effectiveness of Distance Education. OUUK has graduated over 70,000 students with bachelor degrees since 1971. By 1982, OUUK had produced 28,000 teachers, who represents about 5% of all teachers employed in the UK. They found in their survey:

> Although the numbers of teachers entrants may be falling at the OUUK, the number of teachers graduating from conventional institutions may be falling at a faster rate, so that the share of graduate teachers produced by OUUK might still be increasing. It is possible to suggest that the most likely 'outflow' pattern is indicated here: the OUUK might have its greatest effect in enabling particular 'semi-professions' to become all-graduate, to permit a marked 'closure by credentials' to proceed smoothly and rapidly. (Harris, 1987, p. 31)

Beyond the academic integrity and the professional enhancement that the above research indicates, Distance Education has proven to be more effective than conventional Higher Education in the following aspects:

- They enable new target groups who cannot attend a conventional university to enter the higher education sector.
- They can solve the problem of drop-out and produce graduates in significant numbers.
- The can help meet national, local and individual needs.

- The quality of their learning materials can be very high.
- They are potentially more cost-effective than conventional universities.
- Cost-benefit analysis will tend to favor the distance teaching Universities because students are able to study at the same time as they are earning and contributing to GNP.
- Their degrees are gaining acceptance from conventional universities, employers, and the community at large. (Harry & Rumble, 1987, p. 242)

Distance Education does enable more individuals to have access to quality, cost-effective and efficient education that is relevant to their needs than conventional Higher Education. Acceptance of this analysis of Distance Education is not meant to "throw stones" at conventional Higher Education. This analysis should encourage traditional institutions to consider Distance Education as a means of making their programs more accessible to the masses in a cost-effective way, while maintaining both regional accreditation and quality.

Steps for Bridging the Gap with Higher Education

The purpose of this paper is to present Distance Education as a viable tool for expansion of Higher Education. The gap between Higher Education and Distance Education is narrowing through training, further understanding of the philosophy and methodology in Distance Education and the cost-effectiveness of Distance Education for the expansion of conventional Higher Education. Three major developments (processes) are likely to "bridge the gap" in acceptance and participation of Distance Education programs sponsored by campus-based institutions.

Study Centers

A majority of successful Distance Education programs in Higher Education use study centers to facilitate their program. Empire State College has 40 learning sites with faculty based at each center; Nova University establishes "clusters" where a group of students meet together to participate in seminar classes in 24 states of the U.S. and three foreign countries; Penn State's Department of Independent Learning has 250 extension centers serving the nearly 22,000 students; the Open University (OUUK) system also has well over 250 centers throughout the UK serving over 70,000 students, and International Correspondence Institute (ICI) utilizes campus-based institutions around the world to facilitate their print-based programs.

Study centers are anything from single classroom to multi-classroom centers. Their purpose is to be community-based centers, offering easy access to their programs by adults, emphasizing the socialization aspect of learning (involvement in learning), and providing interaction with faculty. study centers often are technological centers where satellite or microwave broadcasts or teleconferencing classes are conducted. Classes facilitated through study centers provide additional structure and face-to-face contact with faculty which is generally needed for the Field Dependent learners to succeed in Distance Education. In cross-cultural settings, centers provide remediation and assistance in adapting new information to the student's culture. Another advantage of study centers is that, through interaction with fellow students, faculty and other school representatives, students are helped in their studies, and motivated to continue---a critical aspect for the success of any distance delivery program.

Study centers serve as the "best of two worlds": providing learner autonomy and, at the same time, faculty interaction accessible for broad-based participation. The "secret" of the American Community College movement is that it offers community-based education which is responsive to the needs of those it serves. Study centers enable campus-based institutions to move from their campus to the community and establish centers which are facilitated with distance delivery programs and allow interaction through facilitators with individual or groups of students.

Billings' (1988) research on course completion indicates that students are more likely to complete programs if they have sufficient support from the institution; study centers serve as administrative and academic centers for distance learners to assist those students who have access to the center. As already stated, it is the author's opinion that the use of study centers in the ICI print-based program in Africa has resulted in more graduates from Africa than any other region of the world. OUUK has found that operating their program through Study Centers costs half that of conventional British Universities, Holmberg states: "Distance education, as applied to large student bodies, is characterized by very favorable cost-benefit relations provided that the distance-teaching element predominates" (Verduin & Clark, 1988, p. 109).

Collaboration

Collaboration is when two or more institutions, organizations, or agencies choose to work together with continuity over a significant time period to achieve agreed and more or less well-defined educational ends to their mutual benefit (Neil, 1981). Utsumi, Rossman and Rosen (1988) express the need for collaboration:

> Global interdependence and interconnection will be the basic premises of the twenty-first century. Today, Earth 'is coming... to be understood as a living organism of interpendent (persons and) communities, and all of us who abide in her life have some responsibility for her future'. Never has the need been more urgent for greater understanding and cooperation among the peoples and nations of the world. (p. 57)

Neil (1981) mentions four broad advantages of collaboration:

> 1. Economic and Technical. The sharing of resources and expenses will enable widening and facilitating of student's access to resources valuable to their learning through cost-effective ventures.

2. Educational. Through collaboration, the objective is to improve the quality of learning materials and increasing educational opportunities for a wider student population.
3. Political and Legal. Through collaboration, often programs are able to meet legal requirements through another institution's accreditation or social acceptance and also to achieve common cultural and social aims. A case in point, ICI has signed an agreement with Nigerian Advanced School of Theology (NAST)---ICI has international accreditation that NAST needs to operate in Nigeria and NAST's faculty are able to adapt ICI's instructional material to be culturally and socially acceptable.
4. Social and Cultural. Through collaboration, institutions are more able to meet the needs of a specific society. Collaborations provide a cost-effective means of responding to specific needs of a society that otherwise would not be possible due to financial and technical constraints.

Collaboration will probably be the "key' for conventional Higher Education to utilize expensive technology. Consortia are rapidly developing to help institutions mitigate the high cost of two-way communication media. The emerging organizational models in the use of video-teleconferencing delivered by satellite are the National Technological University (NTU), the National University Teleconference Network (NUTN), The College Satellite Network, the Electronic University Network and The Interactive Satellite Educational Network (ISEN) which is IBM's satellite used for training within their corporation. NUTN has 250 member organizations that utilize their network; NTU now has fifteen universities that can originate live broadcasts and twenty-four universities are members (Moore, 1988). Many States are developing their own networks to serve their state institutions and agencies; an example is EdNet which serves institutions within Oregon.

The author interviewed several theological institutions of Higher Education and the common response was that they planned to continue using a print-based independent study program and that there was "no way they could afford this new technology". Two things need to happen--the first is being developed in some of the theological schools interviewed: the development of communications department and/or the development of an interactive classroom. This is a significant first step in developing the infrastructure for originating live broadcasts on a satellite or microwave system. The second and probably the most difficult step, theological institutions must be willing to collaborate together and to establish a consortium to achieve their objectives in Distance Education. Utsumi, Rossman and Rosen (1988) articulate how difficult this second-step is:

> This requires understanding and trust. Understandably we may feel threatened by the seeming encouragement of what appears alien to us. Our first inclination may be to retreat, to take refuge in old tribal allegiances, shore up old barriers, shut out the unknown. Then the challenge of the twenty-first century is to *face* the unknown, to welcome it with open minds and open hearts. It seems we must summon up the courage to let down our guard, confident that the intimate connections we invite will enrich and transform us. (p. 66)

New Technology

New two-way communication technology is enabling Distance Education to offer a near perfect facsimile of conventional Higher Education. The new technologies have improved interactive strategies to the point that it is possible for a student located thousands of miles from the institution to participate in a live classroom with the opportunity for interaction while sitting in a mud hut in Africa. With these new technologies, institutions are considering international opportunities---there is literally no limit to where a student could be linked with an institution through satellite transmitted courses. The potential for these new technologies in two-way communication are vast, but the problems are numerous, too.

Dunning (1987) clarifies need for cautious consideration:

> Those who wholeheartedly embrace technology---broadcast video, videocassettes, videodisc, audiocassettes, microcomputers, and new applications of the once-familiar telephone---are in a spirited race to make their new, nontraditional enterprises work. They must strive to remain current with developments that tumble out into the marketplace at breathless pace and often at a high price. These educators need to anticipate rapid-fire developments, and to avoid costly failure, alter their working styles. (p. 42)

These new technologies will "bridge the gap", but they are causing ripples within "classic" print-driven practitioners of Distance Education in Higher Education. Rethinking of "what is Distance Education" is needed by both sides. The author's opinion is that the issue should not be how much Distance Education is behaving like conventional Higher Education, but shouldn't we be excited about providing a more interactive modality for a cheaper price to a global student body? The greatest need on both sides in "bridging the gap" is to have deliberate, collaborative, creative, and purposeful reflections on the special and compelling options open to Distance Education in Higher Education (1987).

The Future of Distance Education

Questions for Higher Education

When considering the use of Distance Education in a campus-based institution, one needs to ask some introspective questions:

1. Does our mission statement and objectives allow for expansion and broad-based participation of our programs?
2. Have we identified our "strategic focus" (what we do best)?
3. What has our environmental analysis study(s) shown in relationship to demographic shifts, aging trends, and educational trends of adults?
4. Are our programs providing opportunities for self-directed learning (andragogical approach) among adults?
5. Do we have access or the capability of producing print-based Distance Education programs?
6. Do we have the technology to produce telecommunication programs?
7. Do we want to create opportunities for greater access of our programs?
8. Are we willing to invest significant monies to develop Distance Education alternatives for our students?
9. What are our Board, alumni, students, and constituencies saying in regards to programs offered and programs desired?
10. Are we going to maintain our traditional view of Higher Education or are we going to establish innovative and adaptive approaches in order to serve a changing society?

These are questions that institutions must ask as they develop strategic plans for their future. Implementation of Distance delivery programs can never be just to keep up with neighboring institutions; instead it must be considered as the most exciting plan for fulfilling an institution's objectives and meeting the needs of a changing society.

Issues in Distance Education

Distance Education also must address some controversial issues in order to foster further dialogue and participation with conventional Higher Education:

1. Can student-centered instruction take place in institutionally developed and controlled program?
2. Is Distance Education really a pedagogical approach for teaching self-directed learners?
3. Can Distance Education serve students with different learning styles, cultures and life styles with the same curriculum?
4. Can a study guide in a print-based program adequately serve as the "teacher" of a Distance delivery course?
5. Is Distance Education adapting the technology to fit the student or adapting the student to use the technology?
6. Are there any common goals or compelling vision of Distance Education for all practitioners?
7. Do any technologies or mix of these technologies significantly advance the acceptance and participation of Distance Education when utilized on a broader scale?

Distance Education must address these complex issues and seek to constantly evaluate their educational philosophy, instructional strategies, and societal trends in order to "bridge the gap" with conventional Higher Education.

Final Words

American is experiencing an aging population, a "graying of the campus", and an insatiable desire for lifelong learning. These trends call for responsive leadership that will seek new avenues to keep abreast with an ever changing society. Distance Education is now coming to the forefront as a viable alternative to "bridge the gap" in meeting the unique needs that Americans are experiencing and will experience during the next century. Understanding and dialogue are essential processes for educational planners as they seek out alternative ways of meeting diverse needs ---that is the intent of this paper. Now is the time to begin that process.....

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